

EMF
Guidelines and Measurements
(reported in milligauss – mG)

Guidelines

International Commission on Non-Ionizing Radiation Protection

Occupational	4,200 mG
General Public	833 mG

American Conference of Governmental Industrial Hygienists

Occupational exposure limit	10,000 mG
General exposure limit	1,000 mG

State of Florida Transmission Lines

For 69-230 kV lines (at edge of ROW)	150 mG
For 500 kV lines (at edge of ROW)	200 mG

State of New York Transmission Lines

All transmission lines (at edge of ROW)	200 mG
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Common Magnetic Objects/Processes

Average bar magnet (DC)	100,000 mG
Junkyard electromagnet	10.0 million mG
Medical MRI	2.0 to 30.0 million mG

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Measurements

At NorthWestern Energy Governmental Affairs Office, Helena, MT

Center of reception area	2.3 mG
Receptionist computer (CPU unit)	13.7 mG
Receptionist computer (keyboard)	4.3 mG
Office television set (at screen)	9.0 mG
Copier (idle)	1.4 mG
Copier (in operation)	3.6 mG
Paper shredder (idle)	2.2 mG
Paper shredder (in operation)	308.0 mG
Keurig Coffee Maker (per cup) (idle)	2.5 mG
Keurig Coffee Maker (per cup) (in operation)	34.0 mG
Microwave oven (in operation)	59.0 mG
Adjacent fluorescent light	43.7 mG

At Fitzpatrick Household, Helena, MT

Center of kitchen (about 5' above floor)	1.0 mG
Steam iron (in operation, at handle)	1.2 mG
Dishwasher (in operation, at door)	10.5 mG
Microwave oven (in operation, at door)	30.4 mG
Electric range (1 burner operating)	6.9 mG
Top of clothes dryer (in operation)	8.7 mG
Speaker of cabinet radio (in operation)	26.7 mG
Center of bedroom	0.4 mG
Clock radio (clock only)	2.9 mG
Air filter/fan (in operation)	671.0 mG
CD/Radio Player (in operation)	
Right speaker	7.5 mG
Left speaker	2.5 mG
Center of bathroom	2.8 mG
Adjacent fluorescent light (ballast end)	84.7 mG
Exhaust fan (in operation)	303.0 mG
Center of garage (lights on)	0.5 mG
Table saw (in operation)	
At motor	624.0 mG
Front of saw	6.8 mG
220-volt AC Welder (idling)	385.0 mG

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Power Lines

Beneath distribution transformer 200 block of 8 th Avenue, Helena, MT	7.7 mG
Beneath distribution line at 200 block of 8 th Avenue, Helena	1.4 mG
Beneath (center) 100 kV transmission lines, Helena Valley	
East line	9.3 mG
West line	3.9 mG
East Helena Substation (at fence)	
Under heavy distribution line	14.6 mG
Near transformer bank	10.6 mG
Beneath 69 kV transmission line to Helena	13.3 mG
Beneath (center) 100 kV line adjacent American Chemet, East Helena, MT	4.8 mG
Beneath (center) 161 kV transmission line Three Forks, MT	22.2 mG
Beneath (center) 230 kV transmission line Three Forks, MT	6.0 mG
Between 161 and 230 kv transmission lines Three Forks, MT	5.5 mG
Beneath (center) of double circuit 500 kV transmission line Between Townsend and Toston, MT	48.4 mG

Source: Compiled by NorthWestern Energy using an Emdex Mate™ Magnetic Field Exposure Meter.